



BASICS OF DATA SCIENCE

Exploring Data Literacy

Agenda

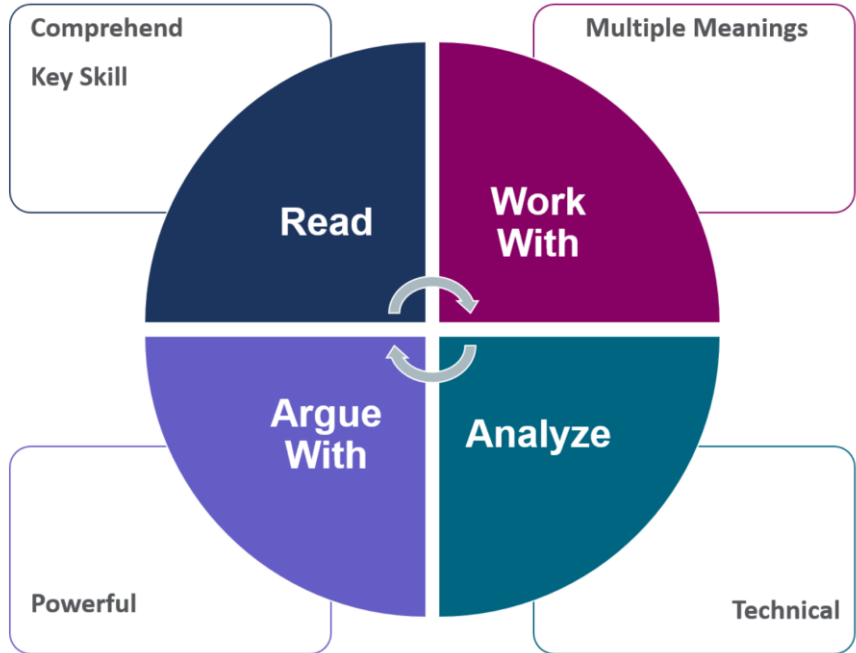
- ▶ Definition of Data Literacy
- ▶ Data Literate Culture
- ▶ Data Personas
- ▶ Adoption of Data Literacy
- ▶ Importance of Data



Data Literacy Definition

What Is Data Literacy?

- ▶ Ability to read, work with, analyze and argue with data is called Data Literacy.
- ▶ It focuses on the competencies involved in the working with data, regardless of your role, skill level, or the BI tools you use.



Why Data Literacy?

- ▶ Improving data literacy hones decision-making skills.
- ▶ We learn to ask the right questions from our data, interpret the findings and take informed action.



Modules in Data Literacy

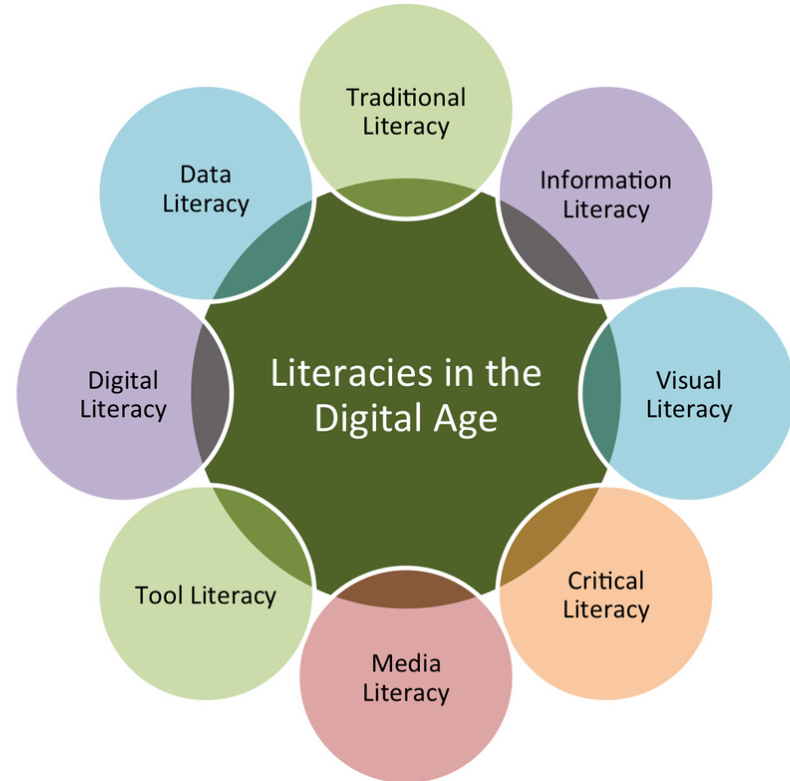
- ▶ Data Literacy consists of
 - ▶ Interpretation
 - ▶ Clarity
 - ▶ Storytelling



Data Literate Culture

Age of Digitalization

- ▶ Data Literacy is just one of the literacy categories of this digitalization era.



Characteristics of Data Literate Culture



Characteristics of Data Literate Culture

Data Fluency

Utilize the language, vocabulary, and conversational skills that go along with data literacy

Analytical Skills

Utilize and develop analytical thinking skills, utilizing proper problem solving techniques

Statistical Methodologies

Data literacy culture utilizes and embraces statistics within the organization

Data Visualizations

Data visualizations help simplify data, enabling various skill-sets to absorb and utilize data

Learning

Establish a consistent learning cadence, studying and learning different areas of data and analytics

Mentoring

Mentoring allows those who have more data literacy skills to pass those skills on to other employees within the organization

Data Personas

Personas in Data Literate Culture

▶ Data Aristocrats

- ▶ Work hard to establish the right vision and buy-in
- ▶ Empower employees to utilize more data
- ▶ Establish the right culture mindset
- ▶ Executives establish vision for organization, People Leaders establish vision for teams



Personas in Data Literate Culture

- ▶ Data Knights
 - ▶ Crucial role
 - ▶ Statistical skill-set
 - ▶ Work well with data
 - ▶ Mentors within organizations



Personas in Data Literate Culture

▶ Data Dreamers

- ▶ Beginners in the world of data
- ▶ Embody essence of data literacy
- ▶ Need to establish strong learning cadence
- ▶ Need to feed of their desires to learn



Personas in Data Literate Culture

- ▶ Data Doubters
 - ▶ Need to maintain balance with the data doubter
 - ▶ Help them see the “why” behind the data
 - ▶ Can be a key to grow data literacy
 - ▶ Help them progress within their skills



Data Personas Activity

Spend some time to think about yourself, which Persona do you fall into. Try to note down 3-4 points to support your response and discuss with the class.

Activity



Data Literacy Adoption

Defining Cultivate

- ▶ Organization or individual is working to acquire, cultivate and utilize skills within data literacy.

Defining Cultivate



Data Literacy Culture Implementation



Steps to a “Best Practices Data Literacy Program”

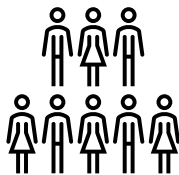
- ▶ Regardless of the size of our business, we can develop a data literacy program using six steps.



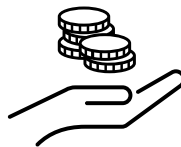
Step 1: Planning and Vision

- ▶ Putting in place a strong data literacy program starts with a formal discussion between people charged with leading data initiatives and strategies in the organization.
- ▶ The agenda should define three critical aspects of the program.

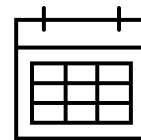
Participants



Funding



Timeframe



Step 2: Communication

- ▶ Craft a thoughtful communication plan that lets people know from the start why you are putting a data literacy program in place.
- ▶ Be transparent about the program from the very beginning.

Career Growth



Job Empowerment

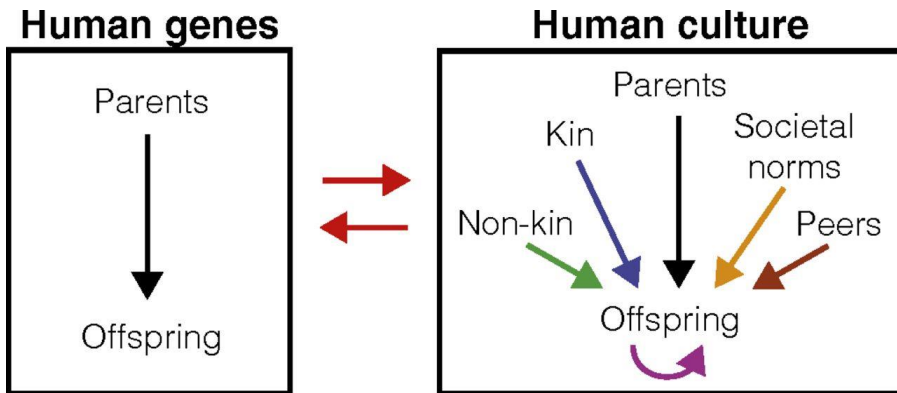


Step 3: Workforce Assessment

- ▶ Leader of a team shouldn't rely on preconceptions or assumptions about team members' current comfort level with data literacy.
- ▶ They will fall under any one of the personas reflecting different levels of data literacy.
 - ▶ Data Aristocrats
 - ▶ Data Knights
 - ▶ Data Dreamers
 - ▶ Data Doubters

Step 4: Cultural Learning

- ▶ Establishing a data literacy program should be approached like other forms of change management.
- ▶ Improving data literacy takes place through cultural learning, woven into the existing culture over time as it proves its value. It is very much similar to how human get traits.



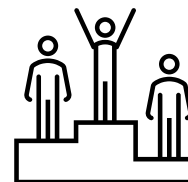
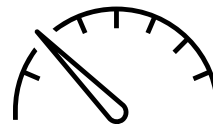
Step 5: Prescriptive Learning

- ▶ Each persona need specific roadmap to get started with data literacy program.
- ▶ Learners need to know that the organization believes data literacy is important in the execution of their job.



Step 6: Measurement

- ▶ Initial discussion should define the kinds of metrics that will be used to evaluate the program.
- ▶ Decide how frequently progress should be measured and make sure positive results are widely celebrated.



Importance of Data

2,500,000,000,000,000,000

(Two and half quintillion)

Data we create every single day!

Data Explosion

A DAY IN DATA

The exponential growth of data is undisputed, but the numbers behind this explosion - fuelled by internet of things and the use of connected devices - are hard to comprehend, particularly when looked at in the context of one day

500m
tweets are sent every day
Twitter

294bn
billion emails are sent
Radical Group

320bn

emails to be sent each day by 2021

306bn

emails to be sent each day by 2020

3.9bn
people use emails

4PB

of data created by Facebook, including

350m photos
100m hours of video watch time
Facebook Research

4TB

of data produced by a connected car
Intel

ACCUMULATED DIGITAL UNIVERSE OF DATA

4.4ZB

44ZB

DEMYSIFYING DATA UNITS

From the more familiar 'bit' or 'megabyte', larger units of measurement are more frequently being used to explain the masses of data

Unit	Value	Size
b	bit	0 or 1
B	byte	1/8 of a byte
KB	kilobyte	8 bits
MB	megabyte	1,000 bytes
GB	gigabyte	1,000,000 bytes
TB	terabyte	1,000,000,000 bytes
PB	petabyte	1,000,000,000,000 bytes
EB	exabyte	1,000,000,000,000,000 bytes
ZB	zettabyte	1,000,000,000,000,000,000 bytes
YB	yottabyte	1,000,000,000,000,000,000,000 bytes

*A lowercase 'b' is used as an abbreviation for bits, while an uppercase 'B' represents bytes.

65bn

messages sent over WhatsApp and two billion minutes of voice and video calls made
Facebook

463EB

of data will be created every day by 2025
BBC

95m

photos and videos are shared on Instagram
Instagram Business

28PB

to be generated from wearable devices by 2020
Statista

Searches made a day

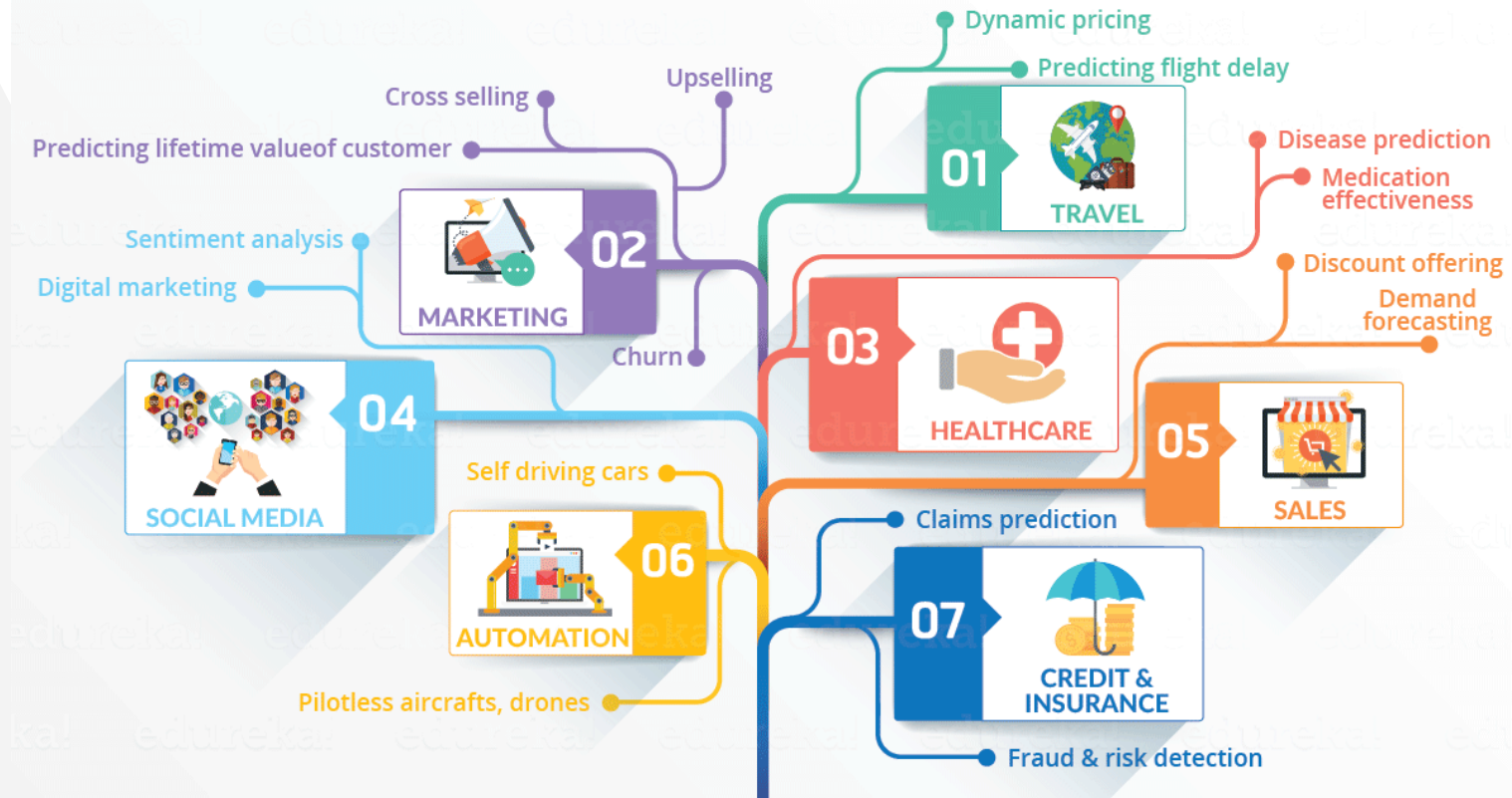
5bn

Searches made a day from Google

3.5bn

Smart Insights

Data in Business



Discussion

Discuss with the class how your organization can use its internal data to improve some of the business operations. Can you recommend any new use case to your company?

Activity



THANKS!

Any questions?